Open integration and modernization with IBM CICS Transaction Gateway V8.0

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At a glance

CICS® Transaction Gateway (CICS TG) V8.0 introduces a range of new capabilities, which include:

- Extended support for Java™ Enterprise Edition (JEE) Application Servers and .NET environments, and optimized for WebSphere® Application Server.
- Improved scalability and availability with support for highly available XA configurations, and exploitation of the Java 6 runtime environment.
- Extended interoperability and simplified security with CICS, and exploitation with CICS Explorer.

Overview

CICS TG

CICS TG is the market-leading IBM® JEE Connector Architecture (JCA) connector, production proven in over a thousand customer environments as the strategic high-performing, security-rich, and scalable method of service-oriented architecture (SOA) access to CICS servers. Additionally, you can now view, operate, and test gateways and connections in the context of the CICS regions and applications they connect to using a new, supported plug-in for the CICS Explorer.

Open integration

CICS TG V8.0 continues to be the premier connector for integration with IBM WebSphere Application Server, both on host and distributed systems. This latest release delivers new supported connectivity for third-party Java Enterprise Edition (JEE) Application Servers, through the provision of a new installation verification test, significantly increasing the range of deployment options for customers.

The addition of channels and containers support for the External Call Interface (ECI) v2 API, allows the delivery of larger payloads for remote C applications, and further support for deployment in .NET environments. This enhancement also provides greater connectivity choice for existing CICS Universal Client customers wishing to migrate to the smaller footprint of the CICS TG. Furthermore, CICS TG V8.0 delivers compatibility for local deployment with 64-bit JEE application servers.

Availability and performance

CICS TG for z/OS® V8.0 offers new improvements made to the high-availability support introduced in previous versions. For the first time, it is possible to create a sysplex-wide highly available Gateway solution incorporating XA transactions,
maintaining transactional scope with CICS systems across the Parallel Sysplex® whilst ensuring that confidence in system up-time is maximized. CICS TG now also supports Java 6, delivering improved scalability and reliability.

CICS TS V4.1 exploitation

This latest version of CICS TG delivers further improvements to allow adopters of CICS Transaction Server for z/OS (CICS TS) V4.1 to get the most out of their overall CICS-based solution. CICS TG V8.0 introduces support for identity propagation, simplifying the passing of security credentials from distributed environments to CICS host systems. Additionally, you can now experience further interoperability with the CICS Explorer, providing increased information for systems programmers to gain improved control over their environment.

Key prerequisites

- IBM z/OS V1.9, or later
- IBM AIX® V5.3 or IBM AIX V6.1 (with 32- or 64-bit kernel)
- Linux® on System z®: RHEL 5, SLES 10, or SLES 11 (with 64-bit kernel)
- Linux on Intel®: RHEL 5, SLES 10, or SLES 11 (with 32- or 64-bit kernel)
- Linux on POWER®: RHEL 5, SLES 10, or SLES 11 (with 64-bit kernel)
- Sun Solaris V10 (with 32- or 64-bit kernel)
- HP-UX11i V2 or V3 (with 32- or 64-bit kernel)
- Microsoft® Windows® XP (with 32- kernel)

Planned availability date

- May 21, 2010 -- CICS TG for Multiplatforms V8.0 (electronic distribution)
- June 18, 2010
  - CICS TG for z/OS V8.0
  - CICS TG for Multiplatforms (media pack)

Description

CICS TG

CICS TG, a market-leading enterprise connector, is production proven for over a thousand customers as a high-performing, security-rich, and scalable method of service-oriented architecture (SOA) access to CICS, providing the following features:

- Delivers JEE standards-based access to CICS applications, while requiring minimal changes to CICS and usually no changes to existing CICS applications
- Provides quick and easy connector access to CICS applications from a wide variety of environments, including Java, C, Microsoft .NET and COBOL runtimes
- Enables the rapid deployment of CICS applications as services in an enterprise-wide SOA
- Allows the reuse of existing CICS applications as services in comprehensive and sophisticated JEE and Web services solutions hosted on powerful application servers such as WebSphere Application Server
- Allows CICS applications to be rapidly service-enabled by connecting them to new environments, such as the Enterprise Service Bus (ESB), the heart of an SOA
The strategic interface within CICS TG that enables JEE connectivity is the JEE Connector Architecture (JCA), a core component of JEE that defines a programming standard to all enterprise Information Systems (EISs). JCA is now a popular method of connectivity because of its ease of implementation and high qualities of service. Using Java Servlets or Enterprise JavaBeans™ (EJB) components, the ECI can be utilized to allow access to CICS COMMAREA or container-based applications. A choice of TCP/IP or SSL connectivity options is supported.

**Enhancements in CICS TG V8.0**

CICS TG V8.0 provides significant enhancements over previous releases in three principle areas:

- Open integration
- Availability and performance
- CICS TS V4.1 exploitation

**Open integration**

*Channels and containers for ECIv2*

The External Call Interface V2 (ECIv2) remote client API now provides support for the CICS Transaction Server for z/OS (CICS TS) channels and containers programming model. This provides a simple method for remote clients to exchange data with CICS programs, in amounts that far exceed the 32-KB limit that applies to COMMAREAs, and additionally provides an optimized and more structured data interface. This enhancement to ECIv2 support provides for potential usage in a wide variety of client runtime environments, including Microsoft .NET, COBOL, and C++, and extends the capability for migration of ECI CICS Universal Client-based applications to a lightweight client footprint. Integration with existing Gateway functionality provides support for one-phase commit transactions, password authentication request, timeout, and high-availability configurations. An updated redistributable multi-platform package for client application development and runtime support is provided.

**JEE installation verification test suite**

JEE application server support is further extended by the provision of a installation verification test suite. This allows simple verification of the CICS JCA resource adapters for usage in any third-party application server compliant with the J2EE 1.4 specification.

**Applets support for SSL**

In addition to the existing Secure Sockets Layer (SSL) support, Java applets can now use an encrypted SSL or Transport Layer Security (TLS) connection to a remote CICS TG daemon, allowing stringent encryption and authentication capabilities and better interoperation with a variety of secure clients.

In addition, the list of JEE application servers is expanded to include usage of a local CICS TG for Multiplatforms V8.0 in the 64-bit Java Runtime Environment provided by WebSphere Application Server for Multiplatforms. Providing enhanced compatibility and scalability on 64-bit operating systems when using the ECI resource adapters with an IP Interconnectivity (IPIC) connection to CICS.

**64-bit local mode Java support**

CICS TG for Multiplatforms V8.0 now provides the ability to operate in local mode within 64-bit Java runtime environments. This support is provided through the ECI resource adapters and enables a direct IPIC connection to a CICS server to be used in a 2-tier environment. This provides enhanced compatibility and scalability for local deployment with 64-bit JEE application servers.

**Availability and performance**
Several new capabilities are provided to simplify the cloning of Gateway daemons in a Parallel Sysplex environment. These facilities also improve problem determination through integration with the runtime statistics provided by the CICS TG.

**Dynamic server selection for XA requests**

The Gateway daemon component of the CICS TG for z/OS V8.0 now supports dynamic server selection for all types of ECI requests, including two-phase commit requests using the XA protocol. This support allows the default server and logical server rules or the CICS request exit infrastructure to be used to create a sysplex-wide high availability CICS infrastructure. This new capability is integrated with z/OS Resource Recovery Services (RRS) and supports EXCI and IPIC CICS connections, to ensure that all transactional requests are delivered to the correct target CICS system, allowing CICS TG to fully exploit the scalability and transactional integrity of the Parallel Sysplex.

**Cold start option**

The Gateway daemon component of CICS TG for z/OS V8.0 supports a cold start option, for use with XA transactions. This option ensures residual records in RRS are cleaned up after failure of a transactional component, or manual intervention by an operator through the RRS panels, and simplifies operational procedures when administering a Gateway using XA transaction support.

In addition, an enhancement is now provided to the CICS request exit infrastructure allowing customized commands to be sent to exits. This new capability provides a simple solution for the dynamic control of server selection polices when creating a high availability CICS TG infrastructure.

**Support for Java 6**

CICS TG V8.0 also provides exploitation for the IBM 32-bit SDK for z/OS Java 2 Technology Edition Version 6. This includes exploitation of the Java shared class cache technology on z/OS, providing for faster start-up times and reduced storage consumption when running multiple Gateway daemons in the same z/OS logical partition (LPAR).

In addition CICS TG for z/OS V8.0 users migrating to IBM z/OS V1.11 can benefit from improved performance for wide area networks through dynamic tuning of the Transmission Control Protocol (TCP) window's size. For further details on IBM z/OS V1.11, refer to Software Announcement ZP09-0277, dated August 18, 2009

**CICS TS V4.1 exploitation**

**Identity propagation**

With the introduction of IBM z/OS V1.11, CICS TG V8.0 supports the z/OS identity propagation capabilities that allow security identities operating in the distributed environment to be associated with security identities used on the server (z/OS user IDs). This enables CICS applications to participate in end-to-end security solutions, therefore benefiting from improved cross-platform accountability and auditing, providing an alternative to custom written identity mapping. This function provides support for identity contexts sent from the JCA managed environment in WebSphere Application Server through the CICS ECI resource adapter and an IPIC connection into CICS TS V4.1 over a trusted IPIC connection. CICS TS V4.1 provides support for identity propagation through APARs PK95579 and PK83741.
**CICS Explorer**

The CICS Explorer - "the new face of CICS" - is the new systems management tool framework for CICS, available from June 2009 for use with CICS TS V3 and CICS TS V4. The CICS Explorer provides an intuitive, easy-to-use way of managing one or more CICS regions. With CICS TG V8.0 a plug-in is now available for use with the CICS Explorer which provides the ability to manage Gateway daemons at version V7.1 or later on any platform. This latest CICS Explorer plug-in also provides an improved set of views and customizations, together with integrated connection management and built-in Gateway and CICS test functions. The earlier unsupported SupportPac™ (CS05) is replaced by the CICS TG V8.0 CICS Explorer plug-in. For further details visit


**IPIC enhancements**

CICS TG supports IPIC connections to CICS that use up to two TCP/IP sockets per connection. The increase in number of sockets helps to alleviate lock contention under load, and can also reduce CPU usage when compared with the previous version of the product.

**Other capabilities**

A new set of sample configuration files is provided for the CICS TG for z/OS v8.0.

**Accessibility by people with disabilities**

The following features support use by people with disabilities:

- Operation by keyboard alone
- Optional font enlargement and high-contrast display settings
- Ability to run with screen readers and screen magnifiers for use by people with visual impairment
- Communication of all information independently of color

The Information Center is accessible to people with visual, physical, or hearing impairment. All functions can be performed without the use of a mouse. Text descriptions are provided for all diagrams, which can be read by a screen reader. The publications documents are also provided in PDF format; this is accessible using Acrobat Reader 8.1, or later.

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


**Value Unit-based pricing**

Value Unit pricing for eligible IBM System z IBM International Program License Agreement (IPLA) programs enables a lower cost of incremental growth and enterprise aggregation. Each System z IPLA product with Value Unit pricing has a single price per Value Unit and a conversion matrix, called Value Unit Exhibit, for converting from some designated measurement to Value Units. Most commonly, Millions of Service Units (MSUs) is the measurement designated by IBM to be converted to Value Units. Some other measurements are engines or messages. Since MSUs are the most common measurement, that measurement will be used for the remainder of this description.

Value Unit pricing offers price benefits for you. For each System z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the **required license capacity**. Each of the various Value Unit Exhibits stipulate that the larger your required license capacity, the fewer Value Units per MSU you will need. Value Unit Exhibits are uniquely...
identified by a three digit code and referred to using the nomenclature VUExxx, where xxx is the three digit code.

Subsequent acquisitions of Value Unit priced programs offer additional price benefits. The quantity of each System z IPLA program that you have acquired is referred to as "entitled license capacity". If you wish to grow your entitled license capacity for a System z IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

For each System z IPLA program with Value Unit pricing, you should:

- Determine the required license capacity, in MSUs
- Aggregate the MSUs across the enterprise
- Convert the total MSUs to Value Units, using the applicable Value Unit Exhibit
- Multiply the price per Value Unit by the total number of Value Units to determine the total cost

To simplify conversion from the designated measurement to Value Units or vice-versa, use the Value Unit Converter Tool. For additional information or to obtain a copy of the Value Unit Converter Tool, visit the Value Unit Converter Tool Web site

http://ibm.com/zseries/swprice/vuctool

Note that Value Units of a given product cannot be exchanged, interchanged, or aggregated with Value Units of another product.

To determine the required license capacity for the System z IPLA program you selected, refer to the Terms and conditions section.

**Product positioning**

To help support an end-to-end On Demand Business environment, CICS TG is a production-proven, high-performing, security-rich and scalable JEE connector that requires minimal changes to CICS systems and usually no changes to existing CICS applications. It allows you to rapidly service-enable your CICS applications by connecting them to new environments, such as the enterprise service bus (ESB) that is at the heart of your SOA.

To enable comprehensive composite-application-serving infrastructures, CICS TG provides connectivity from WebSphere SOA foundation servers to CICS TS. The strategic interface within CICS TG that enables this is the JCA adapter, a component of the JEE specification.

JCA is a popular method of JEE connectivity because of its ease of implementation and high qualities of service. It delivers managed qualities of service for connections, transactions and security and is transparent to application developers.

In a managed environment, like that of WebSphere Application Server system contracts enable these management capabilities. They help to make the JCA a robust solution for integrating COMMAREA or container-based CICS applications with JEE applications running in WebSphere Application Server.

Tightly-coupled connectivity solutions such as JCA, along with other JEE standard services such as Java Message Service (JMS) and Java Database Connectivity (JDBC), can coexist with loosely-coupled Web services to take advantage of the agility of an SOA.

The term tightly-coupled means that there is a predetermined client-server or consumer-publisher relationship that is not so easy to change. In such a case you typically have for a given client only one specific server with technical interaction that is fault-sensitive, meaning that the client has to handle protocol-related errors. Loosely-coupled systems are often designed to work on a problem partitioned around data flow boundaries, in which workers solve only one part of a larger...
Choosing the right deployment platform for your gateway is important. CICS TG V8.0 currently supports the following platforms:

- IBM z/OS
- IBM AIX
- Linux on Intel, POWER or IBM System z
- Microsoft Windows
- Sun Solaris on the SPARC platform
- HP-UX on RISC or Itanium® platforms

Connectivity is provided on these platforms from all supported WebSphere Application Server environments to all supported CICS servers. The qualities of service of CICS TG are highest when deploying on the z/OS platform.

TXSeries® for Multiplatforms is a distributed CICS Online Transaction Processing (OLTP) environment for business-critical applications written in enterprise programming languages. CICS TG is the strategic connector between TXSeries CICS servers and WebSphere Application Servers. TXSeries is the ideal deployment environment for high-performance, distributed transactional applications that integrate well into your mixed-language, multiplatform SOA solution. TXSeries or Multiplatforms V7.1 extends and enhances the next generation of distributed CICS across a number of platforms. For further details on TXSeries for Multiplatforms V7.1, refer to its announcement in the Reference information section.

To help you to transform your CICS TS into your SOA hub on System z, the Rational® Tools and the CICS Tools deliver support right across the life cycle whether you are building new or reusing existing applications. Rational Tools helps you to modernize and transform existing CICS applications whether your goal is to develop and deploy new workloads to leverage the unique performance, availability, security, and cost benefits of System z; to increase your responsiveness to business requirements by modernizing your mainframe platform. CICS Tools enable you to optimize the management of your IT environment, reducing cost and complexity while improving governance and compliance.

CICS and System z Tools enhance the CICS family of transaction processing solutions by analyzing and optimizing the functionality, performance, and efficiency of CICS systems. Some of these tools help your customers make the most of their CICS TG:

- **IBM Tivoli® OMEGAMON® XE for CICS TG on z/OS** -- Real-time performance management, monitoring, and troubleshooting for CICS TG
- **CICS Performance Analyzer for z/OS (CICS PA)** -- A reporting tool that provides information on the performance of CICS systems and applications. Built to address CICS performance analysis, system tuning and capacity planning, CICS PA also helps with management and migration of CICS systems to the latest versions of CICS TS. CICS PA provides a level of detail and flexibility that can easily help find new ways to improve CICS system performance, lower maintenance costs, and strategically plan IT investments. CICS PA V3.1 (with APAR PM10187) offers support for the SMF 111 records generated on z/OS by CICS TG V8.0, providing an even more comprehensive understanding of CICS system performance.
Reference information

For the announcement of CICS Transaction Server for z/OS V4.1, refer to Software Announcement ZP09-0161, dated April 28, 2009

Program number

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<td>CICS Transaction Gateway for z/OS</td>
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Product identification number

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Offering Information

Product information is available via the Offering Information Web site

http://www.ibm.com/common/ssi

Publications

No hardcopy publications are shipped with this product, with the exception of the Program Directory (document number GI13-0555), which is provided in hard-copy.

The Information Center for CICS TG V8.0 provides information on the product and is shipped on with the product.

The Information Center for CICS TG for Multiplatforms V8.0 is provided on the product DVD.

From June 18 2010, the Information Center can also be accessed at the following Web sites:

http://publib.boulder.ibm.com/infocenter/cicstgzo/v8r0/index.jsp
http://publib.boulder.ibm.com/infocenter/cicstgmp/v8r0/index.jsp

Included in the Information Center are the following documents which specifically apply to CICS TG for z/OS V8.0 and CICS TG for Multiplatforms V8.0:

<table>
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<tr>
<td>CICS TG for z/OS V8.0: z/OS Administration</td>
<td>SC34-7058</td>
</tr>
<tr>
<td>CICS TG for z/OS V8.0: Programming Guide</td>
<td>SC34-7059</td>
</tr>
<tr>
<td>CICS TG V8.0 UNIX® and Linux Administration</td>
<td>SC34-7054</td>
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<tr>
<td>CICS TG V8.0 Windows Administration</td>
<td>SC34-7055</td>
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<tr>
<td>CICS TG for Multiplatforms V8.0 Programming Guide</td>
<td>SC34-7056</td>
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<tr>
<td>CICS TG for Multiplatforms V8.0 Programming Reference</td>
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<tr>
<td>CICS TG for V8.0: Messages</td>
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The Information Center is based on the Eclipse platform. Delivery in this form exploits a common framework that is now employed by many other IBM products. This brings a range of benefits to the user. One of these is that the use of a common framework gives a common look and feel, and consistency of behavior, across all the using products. The infrastructure also allows you to customize your own Information Centers using plug-ins from multiple products, or to write your own plug-ins.

The IBM Publications Center is available at

http://www.ibm.com/shop/publications/order

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders use a credit card (in the U.S.) or a customer number in up to 20 different countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries, free of charge.

**Technical information**

**Specified operating environment**

**Hardware requirements**

CICS TG V8.0 will run on any of the following hardware:

- IBM System z machine supported by Linux
- 32- or 64-bit IBM System p® supported by IBM AIX or Linux
- 32- or 64-bit Sun SPARC system supported by Sun Solaris
- 32- or 64-bit HP PA-RISC 1.1 or 2.0 system supported by HP-UX
- 64- HP Itanium system supported by HP-UX
- Intel Pentium®, AMD Opteron or Intel EM64T system supported by Microsoft Windows or Linux

**Supported operating systems**

The following is a summary of supported operating systems for each relevant version of CICS TG V8.0:

- IBM z/OS V1.9, or later
- IBM AIX V5.3 or IBM AIX V6.1 (with 32- or 64-bit kernel)
- Linux on System z: RHEL 5, SLES 10, or SLES 11 (with 64-bit kernel)
- Linux on Intel: RHEL 5, SLES 10, or SLES 11, (with 32- or 64-bit kernel)
- Linux on POWER: RHEL 5, SLES 10, or SLES 11, (with 64-bit kernel)
- Sun Solaris V10 (with 32- or 64-bit kernel)
The CICS TG is designed to provide interoperability with all supported levels of CICS, the following list summarizes CICS servers currently supported by IBM:

- CICS TS for z/OS V3.1, or later
- CICS TS for z/OS V4.1, or later
- TXSeries for Multiplatforms V6.0, or later
- CICS/VSE® V2.3
- CICS TS for VSE V1.1
- CICS TS V5.4 for i5/OS®, or later

**Supported JEE Application Servers**

- WebSphere Application Server V6.1
- WebSphere Application Server V7.0

Note that third-party JEE application servers can be verified using the CICS TG V8.0 installation verification test utility.

For the most up-to-date information and fuller details on software requirements, refer to Supported Software for CICS TG products, at

http://www.ibm.com/software/htp/cics/ctg/reqs

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a README file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only using English language.

**Companion products**


**Compatibility**

**Named pipe protocol compatibility**

For CICS TG for Multiplatforms V8.0, or later, in place of the Named Pipe protocol supported on Microsoft Windows for usage with co-located CICS system, the recommended migration path is to move connections to a TCP/IP based protocol.

**AutoJavaGateway compatibility**

In place of the AutoJavaGateway Java class auto protocol, for CICS TG V8.0, or later, the recommended approach is to use local, TCP or SSL protocols.

**Asynchronous ECI Java APIs**

As previously indicated the support for ECI Generic replies for asynchronous ECI requests, non-validated message qualifiers and non-validated units-of-work have been withdrawn from CICS TG V8.0. The recommended approach is to either migrate applications to use synchronous ECI requests or to disable generic replies for asynchronous ECI requests and to validate all units of work and message qualifiers.
**Configuration tool**

The Configuration tool has been withdrawn from CICS TG for z/OS V8.0. The recommended approach is to use the new sample configuration files to create required configurations.

**User group requirements**

This announcement satisfies or partially satisfies the following requirements from one or more of the worldwide user group communities.

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<th>Requirement number</th>
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<td>CICS Request Exit Command Functions</td>
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<td>MR1217094246</td>
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<td>MR1001084037</td>
<td>Windows 2008 System Support by CICS TG</td>
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<td>MR1109063045</td>
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<td>MR1227062446</td>
<td>CTG windows service to accurately reflect status after Client daemon ends</td>
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<td>MR0128085753</td>
<td>CTG IPIC examples for CICS connectivity</td>
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**Planning information**

**Packaging**

**For CICS TG for z/OS V8.0**

CICS TG for z/OS V8.0 is shipped via Customized Offerings, on 3480 1/2-inch tape cartridge.

Additional media type selections (3480 compressed, 3490E, 3590, 3592) are offered during Custom Build Offering ordering.

Also shipped are:
- Documentation CD-ROM (LCD7-4431)
- License Information in multilanguage booklet (GC34-7123)
- Program directory (GI13-0555)

**For CICS TG for Multiplatforms V8.0**

CICS TG for Multiplatforms V8.0 will be delivered via Passport Advantage®. The software and documentation will be available for electronic download and on a DVD in a media pack. The media pack for CICS TG for Multiplatforms V8.0 will include:

- Program, documentation, and publications DVD
- Quick Start guide

This program, when downloaded from a Web site, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory, such as LICENSES.

**Security, auditability, and control**

CICS TG for z/OS V8.0 and CICS TG for Multiplatforms V8.0 use the security and auditability features of the operating system under which they are running. Customers can use any Security Authorization Facility (SAF)-compliant security...
product, such as RACF®. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

Ordering information

This product is available for ordering by program and feature number, or by part number.

When ordering by part numbers, this product can be obtained through IBM Passport Advantage. Contact your IBM representative or IBM Business Partner Reseller and Distributors for WorkStation Software.

For more information, contact your IBM sales specialist, IBM Business Partner, or visit


This distributed product is only available via Passport Advantage. It is not available as shrinkwrap.

Product group: IBM CICS

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CICS Transaction Gateway program licenses

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<td></td>
</tr>
</tbody>
</table>

Passport Advantage supply

CICS Transaction Gateway V8.0 Multiplatform Multilingual Media Pack | BAOYTML |

Passport Advantage customer: Media pack entitlement details

Cross-platform product for use on System z

Order the part numbers that follow when there is an intention to acquire this cross-platform product for deployment on the System z or S/390® platform. This set of part numbers provides the identical supply and authorization as the other set in this announcement. The distinction is to identify the planned deployment platform.
Program name/Description                              Part number
CICS Transaction Gateway Linux on z Value Unit Annual SW Maint Rnw1             E021CLL
CICS Transaction Gateway Linux on z Value Unit Lic+SW Maint 12 Mo              D55L1LL
CICS Transaction Gateway Linux on z Value Unit SW Maint Reinstate 12 Mo       D55L2LL

**On/Off Capacity on Demand (CoD)**

CICS TG

CICS TRANSACTION GATEWAY PROCESSOR DAY OOCOD OOCOD TEMP USE CHRG ASQ68LL

The z/OS program in this announcement has Value Unit-based pricing.

**Charge metric**

<table>
<thead>
<tr>
<th>Program name</th>
<th>PID number</th>
<th>Charge metric/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICS TG for z/OS V8.0</td>
<td>5655-W10</td>
<td>Value Units</td>
</tr>
<tr>
<td>CICS TG for z/OS Subscription and Support</td>
<td>5655-M70</td>
<td>Value Units</td>
</tr>
<tr>
<td>CICS TG for Multiplatforms V8.0</td>
<td>5724-I81</td>
<td>Processor Day</td>
</tr>
<tr>
<td>CICS TG for Multiplatforms V8.0</td>
<td>5724-I81</td>
<td>Processor Value Unit (PVU)</td>
</tr>
</tbody>
</table>

**Processor Value Unit (PVU)**

PVU is a unit of measure by which this software product can be licensed. PVU entitlements are based on processor technology (defined within the PVU table² by processor vendor, brand, type and model number). IBM continues to define a processor, for purposes of PVU-based licensing, to be each processor core on a chip. Each software product has a unique price per PVU. To determine the total cost of deploying an individual software product in a specific hardware environment, you must take the following steps:

1. For each processor core in the hardware environment on which the software product is to be licensed, determine the PVU requirement based on its processor technology per the PVU table²
2. The PVU requirements for all processor cores in the hardware environment.
3. Multiply the software product's price per PVU by the total number of PVUs required as determined in step 2 above.

PVU entitlements are specific to a software product and may not be exchanged, interchanged, or aggregated with PVU entitlements of another software product.

Unless you have deployed eligible sub-capacity products according to the sub-capacity² terms, you must obtain PVU Proof of Entitlements (PoEs) for the maximum number of activated physical processor cores in the hardware environment made available to, or managed by, the software product. This is also referred to as full capacity licensing.

² For information regarding PVU and sub-capacity licensing, including the latest PVU table, visit
Activated processor cores are physical processor cores that are available for use in a server. They include processor cores:

- That are activated (available for use) when the server is shipped by the manufacturer
- That are activated subsequently through activation codes purchased from the server manufacturer by the customer
- Whose capacity can be limited by the customer through virtualization technologies, operating system commands and BIOS settings

**Value Unit**

Value Unit (VU) is the unit of measure by which this program is licensed. VU entitlements are based on the quantity of a specific designated measurement, either users or resources, for the given program. A Proof of Entitlement (PoE) must be obtained for the appropriate number of VUs required for your environment as defined by the specific program terms. The VU entitlements are specific to the program and may not be exchanged, interchanged, or aggregated with VU entitlements of another program. To understand these benefits of VU licensing, and to determine how many VUs to obtain for the program, contact your IBM representative.

**For CICS TG for z/OS**

**Ordering z/OS through the Internet**

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the U.S. and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries Web site at


**Basic license**

For CICS TG for z/OS V8.0

**On/Off Capacity on Demand (On/Off CoD)**

CICS TG for z/OS V8.0 is eligible for On/Off CoD with a temporary use charge calculated based on MSUs per-day usage.

<table>
<thead>
<tr>
<th>Program Name</th>
<th>CICS TG for z/OS V8.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program PID</td>
<td>5655-W10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entitlement Identifier</th>
<th>Description</th>
<th>License Option/Pricing Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01641G</td>
<td>CICS TG for z/OS V8.0</td>
<td>Basic OTC, Per MSU-day TUC</td>
</tr>
</tbody>
</table>

For CICS TG for z/OS V8.0

<table>
<thead>
<tr>
<th>Program Name</th>
<th>CICS TG for z/OS V8.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program PID</td>
<td>5655-W10</td>
</tr>
</tbody>
</table>
The following information is a summary of all license options and pricing metrics offered for the above PID number.

### Entitlement

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description</th>
<th>License Option/Pricing Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01641G</td>
<td>CICS TG for z/OS V8.0</td>
<td>Basic OTC, Value units</td>
</tr>
</tbody>
</table>

**Orderable Supply ID:** U.S. English

3480 tape cartridge uncomp

Note: additional media type selections (3480 compressed, 3490E, 3590, 3592) are offered during Custom Build Offering ordering.

---

### Subscription and Support PID 5655-M70

The following information is a summary of all license options and pricing metrics offered for the above PID number.

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description</th>
<th>License Options /Pricing Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0118LP</td>
<td>CICS Transaction Gateway for z/OS</td>
<td>Basic MSC, Value Units SW S&amp;S</td>
</tr>
<tr>
<td></td>
<td>- Subscription</td>
<td>Decline SW S&amp;S (no charge)</td>
</tr>
<tr>
<td></td>
<td>and Support</td>
<td>Per MSU SW S&amp;S Registration</td>
</tr>
</tbody>
</table>

**Orderable Supply ID:** U.S. English

Paper

**Subscription and Support - for CICS TG for z/OS**

To receive voice technical support via telephone and future releases and versions at no additional charge, Subscription and Support must be ordered. The capacity of Subscription and Support (Value Units) must be the same as the capacity ordered for the product licenses.

To order, specify the Subscription and Support program number (PID) referenced above and the appropriate license or charge option.

IBM is also providing Subscription and Support for these products via a separately purchased offering under the terms of the IBM International Agreement for Acquisition of Software Maintenance (IAASM). This offering:

- Includes and extends the support services provided in the base support to include technical support via telephone.
- Entitles you to future releases and versions, at no additional charge. Note that you are not entitled to new products.

When Subscription and Support is ordered, the charges will automatically renew annually unless cancelled by you.

The combined effect of the IPLA license and the Agreement for Acquisition of Software Maintenance gives you rights and support services comparable to those under the traditional ICA S/390 and System z license or its equivalent. To ensure that you continue to enjoy the level of support you are used to in the ICA business model, you must order both the license for the program and the support for the selected programs at the same Value Unit quantities.
**Single version charging**

To elect single version charging, you must notify and identify to IBM the prior program and replacement program, and the machine the programs are operating on.

**Processor Value Unit (PVU) sub-capacity licensing**

This software product is eligible for sub-capacity licensing. Customers must accept the terms of the IBM International Passport Advantage Agreement Attachment for Sub-Capacity Licensing Terms (Attachment), and must obtain PVU Proofs of Entitlement (PoEs) for the maximum processor core capacity available to an eligible sub-capacity product when deployed in an eligible virtualization environment. This is also referred to as sub-capacity or virtualization capacity licensing.

Customers must use the IBM License Metric Tool unless they meet the exceptions described in the Attachment.

For information regarding PVU sub-capacity licensing, including terms and IBM License Metric Tool ordering information, visit


The z/OS program in this announcement has Value Unit-based pricing.

<table>
<thead>
<tr>
<th>Program number</th>
<th>Program name</th>
<th>Value Unit Exhibit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5655-W10</td>
<td>CICS TG for z/OS V8.0</td>
<td>VUE007</td>
</tr>
</tbody>
</table>

For each System z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the **required license capacity**. Your required license capacity is based upon the following factors:

- The System z IPLA program you select
- The applicable Value Unit Exhibit
- The applicable terms
- Whether your current mainframes are full capacity or sub-capacity

**Value Unit exhibit VUE007**

<table>
<thead>
<tr>
<th>MSUs minimum</th>
<th>MSUs maximum</th>
<th>Value Units/MSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Tier A</td>
<td>4</td>
<td>45</td>
</tr>
<tr>
<td>Tier B</td>
<td>46</td>
<td>175</td>
</tr>
<tr>
<td>Tier C</td>
<td>176</td>
<td>315</td>
</tr>
<tr>
<td>Tier D</td>
<td>316</td>
<td>+</td>
</tr>
</tbody>
</table>

Value Units for mainframes without MSU ratings:

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Value Units/machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP3000 H30</td>
<td>6</td>
</tr>
<tr>
<td>MP3000 H50</td>
<td>8</td>
</tr>
<tr>
<td>MP3000 H70</td>
<td>12</td>
</tr>
<tr>
<td>ESL models</td>
<td>2</td>
</tr>
</tbody>
</table>

**Ordering example**

The total number of Value Units is calculated according to the following example.
If your required license capacity is 1,500 MSUs for your selected System z IPLA product, the applicable Value Units would be:

**Translation from MSUs to Value Units**

<table>
<thead>
<tr>
<th></th>
<th>MSUs</th>
<th>Value Units/MSU</th>
<th>Value Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>3</td>
<td>1.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Tier A</td>
<td>42</td>
<td>.45</td>
<td>18.90</td>
</tr>
<tr>
<td>Tier B</td>
<td>130</td>
<td>.36</td>
<td>46.80</td>
</tr>
<tr>
<td>Tier C</td>
<td>140</td>
<td>.27</td>
<td>37.80</td>
</tr>
<tr>
<td>Tier D</td>
<td>1,185</td>
<td>.20</td>
<td>237.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,500</td>
<td></td>
<td>343.50</td>
</tr>
</tbody>
</table>

When calculating the total number of Value Units, the sum is to be rounded up to the next integer.

**Customized Offerings for z/OS host products**

Product deliverables are shipped only via Customized Offerings (for example, CBPDO, ServerPac, SystemPac®).

CBPDO and ServerPac are offered for Internet delivery, where ShopzSeries product ordering is available. Internet delivery of ServerPac may help improve automation and software delivery time. For more details on Internet delivery, refer to the ShopzSeries help information at [http://www.software.ibm.com/ShopzSeries](http://www.software.ibm.com/ShopzSeries)

Media type for this software product is chosen during the Customized Offerings ordering process. Based on your customer environment, it is recommended that the highest possible density tape media is selected. Currently offered media types are:

- CBPDOS - 3480, 3480 Compressed, 3490E, 3590, 3592*
- ServerPacs - 3480, 3480 Compressed, 3490E, 3590, 3592*
- SystemPacs - 3480, 3480 Compressed, 3490E, 3590, 3592*

*3592 is highest density media. Selecting 3592 will ship the fewest number of media.

Once a product becomes generally available, it will be included in the next ServerPac and SystemPac monthly update.

Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after inclusion in ServerPac.
- SystemPac shipments will begin four weeks after inclusion in SystemPac due to additional customization, and data input verification.

**Terms and conditions**

The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

**CICS TG for Multiplatforms**
This product is only available via Passport Advantage. It is not available as shrinkwrap.

**Licensing**

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use. Part number products only, offered outside of Passport Advantage, where applicable, are license only and do not include Software Maintenance.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

**Agreement for Acquisition of Software Maintenance**

The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) agreement applies for subscription and support (also referred to as Software Maintenance) and does not require customer signatures.

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

**License Information form number**

CICS TG for Multiplatforms V8.0: L-AFOS-82KFHV

The program’s License Information will be available for review on the IBM Software License Agreement Web site


**Limited warranty applies**

Yes

**Limited warranty**

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at


IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

**Program technical support**
Technical support of a program product will be available for a minimum of five years from the general availability date, as long as your Software Subscription and Support (also referred to as Software Maintenance) is in effect.

This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Subscription and Support (Software Maintenance) also provides you with access to updates, releases, and versions of the program. You will be notified, via announcement letter, of discontinuance of support with 12 months’ notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

Money-back guarantee

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) for programs acquired under any of IBM’s On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Authorization for use on home/portable computer

You may not copy and use this program on another computer without paying additional license fees.

Volume orders (IVO)

No

Passport Advantage applies

Yes, and through the Passport Advantage Web site at

http://www.ibm.com/software/passportadvantage

Usage restriction

Yes

Program Unique Terms

A) Source Components - The Program may include some components in source code form ("Source Components"). Licensee may copy and modify Source Components for internal use only provided such use is within the limits of the license rights under this Agreement, provided however that Licensee may not alter or delete any copyright information or notices contained in the Source Components. IBM provides the Source Components without obligation of support and "AS IS", WITH NO WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE WARRANTY OF TITLE, NON-INFRINGEMENT OR NON-INTERFERENCE AND THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

B) The J2EE Connector Architecture (JCA) resource adapters supplied with the Program and packaged in the files named 'cicseci.rar', 'cicseciXA.rar', and 'cicsepi.rar', and the Java client classes supplied with the Program and packaged in the files named 'ctgclient.jar' and 'ctgstats.jar' may be freely distributed by licensed users of the Program. Licensed users who choose to distribute these client classes
assume responsibility for the support and maintenance of the distributed classes. IBM's consent to such distribution is on the basis that licensed users of the Program are responsible for ensuring that:

(i) no 'JAR' or 'RAR' file is modified from its original form;

(ii) no 'JAR' or 'RAR' file is used other than within a Java environment supported by the Program; and

(iii) all communication is to a CICS Transaction Gateway at the same or a higher release level than the version of the 'ctgclient.jar' or 'RAR' file.

C) The C language header and lib files supplied with the Program and packaged in the file named ctgredist.zip file may be freely distributed by licensed users of the Program. Licensed users who choose to distribute these files assume responsibility for the support and maintenance of the files. IBM's consent to such distribution is on the basis that licensed users of the Program are responsible for ensuring that:

(i) no file is modified from its original form;

(ii) no file is used otherwise than within an environment supported by the Program; and

(iii) no file is used other than for the purpose of the development or execution of client applications for use with the Program.

D) The Program includes a plug-in to support the use of the IBM CICS Explorer with the Program. The supplied plug-in is licensed by IBM, under the terms and conditions of this license, solely for use by Licensee with a copy of the IBM CICS Explorer. Licensee's authorization to use the supplied plug-in will expire automatically upon expiration of Licensee's authorization to use the Program.

E) The following subset of open source software was obtained from the Eclipse Foundation: Eclipse Help System, MX4J, Lucene, Lucene HTML Parser, Jetty (herein collectively referred to as "Eclipse Code"). Notices and important information, including instructions for obtaining source code, for the Eclipse Code may be found in associated "about.html" files ("About Files") that accompany the Eclipse Code. These About Files are provided for informational purposes only, and notwithstanding anything to the contrary therein, Licensee's use of such Eclipse Code shall be governed by the terms of the IBM end user license agreement.

For additional information, refer to the License Information document that is available on the IBM Software License Agreement Web site


**Software Subscription and Support (Software Maintenance) applies**

Yes. Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and Technical Support are provided by the Software Subscription and Support (Software Maintenance) offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software and Technical Support provides voice and electronic access to IBM support organizations, worldwide.

IBM includes one year of Software Subscription and Support (Software Maintenance) with each program license acquired. The initial period of Software Subscription and Support (Software Maintenance) can be extended by the purchase of a renewal option, if available.

While your Software Subscription and Support (Software Maintenance) is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your
end users.) IBM provides Severity 1 assistance 24 hours a day, 7 days a week. For additional details, consult your IBM Software Support Handbook at

http://www.ibm.com/support/handbook

Software Subscription and Support (Software Maintenance) does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under the applicable agreements.

For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, visit the Passport Advantage Web site at

http://www.ibm.com/software/passportadvantage

Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

While your Software Subscription and Support (Software Maintenance) is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Handbook at

http://www.ibm.com/support/handbook

Software Subscription and Support (Software Maintenance) does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

For more information about the Passport Advantage Agreement, visit the Passport Advantage Web site at

http://www.ibm.com/software/passportadvantage

Variable charges apply

No

Educational allowance available

Education allowance does not apply.

Education software allowance does not apply.

Special education prices are available for qualified customers through Passport Advantage.

CICS TG for z/OS

Licensing

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use.

Agreement for Acquisition of Software Maintenance
The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) agreement applies for subscription and support and does not require customer signatures.

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

IBM System z Operational Support Services - SoftwareXcel is an option if you desire added services.

**License Information form number**

CICS TG for z/OS V8.0: L-AFOS-82KDR2

The program's License Information will be available for review on the IBM Software License Agreement Web site


**Limited warranty applies**

Yes

**Limited warranty**

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

http://www.ibm.com/support/handbook

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

**Program technical support**

Technical support of a program product will be available for a minimum of five years from the general availability date, as long as your Subscription and Support is in effect.

This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Subscription and Support also provides you with access to updates, releases, and versions of the program. You will be notified, via announcement letter, of discontinuance of support with 12 months' notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

**Money-back guarantee**

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you
obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

**Authorization for use on home/portable computer**

You may not copy and use this program on another computer without paying additional license fees.

**Volume orders (IVO)**

No

**Passport Advantage applies**

No

**Usage restriction**

Yes

**Program Unique Terms**

A) Source Components - The Program may include some components in source code form ("Source Components"). Licensee may copy and modify Source Components for internal use only provided such use is within the limits of the license rights under this Agreement, provided however that Licensee may not alter or delete any copyright information or notices contained in the Source Components. IBM provides the Source Components without obligation of support and "AS IS", WITH NO WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE WARRANTY OF TITLE, NON-INFRINGEMENT OR NON-INTERFERENCE AND THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

B) The J2EE Connector Architecture (JCA) resource adapters supplied with the Program and packaged in the files named 'cicseci.rar', 'cicseciXA.rar' and the Java client classes supplied with the Program and packaged in the files named 'ctgclient.jar' and 'ctgstats.jar’ may be freely distributed by licensed users of the Program. Licensed users who choose to distribute these client classes assume responsibility for the support and maintenance of the distributed classes. IBM’s consent to such distribution is on the basis that licensed users of the Program are responsible for ensuring that:

(i) no 'JAR' or 'RAR' file is modified from its original form;

(ii) no 'JAR' or 'RAR' file is used other than within a Java environment supported by the Program; and

(iii) all communication is to a CICS Transaction Gateway at the same or a higher release level than the version of the 'ctgclient.jar' or 'RAR' file.

C) The C language header and lib files supplied with the Program and packaged in the file named ctgredist.zip file may be freely distributed by licensed users of the Program. Licensed users who choose to distribute these files assume responsibility for the support and maintenance of the files. IBM's consent to such distribution is on the basis that licensed users of the Program are responsible for ensuring that:

(i) no file is modified from its original form;

(ii) no file is used otherwise than within an environment supported by the Program; and
(iii) no file is used other than for the purpose of the development or execution of client applications for use with the Program.

D) The Program includes a plug-in to support the use of the IBM CICS Explorer with the Program. The supplied plug-in is licensed by IBM, under the terms and conditions of this license, solely for use by Licensee with a copy of the IBM CICS Explorer. Licensee's authorization to use the supplied plug-in will expire automatically upon expiration of Licensee's authorization to use the Program.

E) The following subset of open source software was obtained from the Eclipse Foundation: Eclipse Help System, MX4J, Lucene, Lucene HTML Parser, Jetty (herein collectively referred to as "Eclipse Code"). Notices and important information, including instructions for obtaining source code, for the Eclipse Code may be found in associated "about.html" files ("About Files") that accompany the Eclipse Code. These About Files are provided for informational purposes only, and notwithstanding anything to the contrary therein, Licensee's use of such Eclipse Code shall be governed by the terms of the IBM end user license agreement.

For additional information, refer to the License Information document that is available on the IBM Software License Agreement Web site


**Software Subscription and Support (Software Maintenance) applies**

No

For Operating System software, the revised IBM Operational Support Services - SoftwareXcel offering will provide support for those operating systems and associated products that are not available with the Software Subscription and Support (Software Maintenance) offering.

This will ensure total support coverage for your enterprise needs, including IBM and selected non-IBM products. For complete lists of products supported under both the current and revised offering, visit

http://www.ibm.com/services/sl/products

**System i Software Maintenance applies**

No

**Variable charges apply**

No

**Educational allowance available**

Yes. When ordering through the program number process, a 15% education allowance applies to qualified education institution customers.

Education software allowance program applies when ordering through the program number process.

**ESAP available**

Yes, to qualified customers.

**Sub-capacity terms and conditions for System z host products**

For each System z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the required license capacity. Your required license capacity is based upon the following factors:

- The System z IPLA program you select
The applicable Value Unit Exhibit
The applicable terms
Whether your current mainframes are full capacity or sub-capacity

For more information on the Value Unit Exhibit for the System z IPLA program you selected, refer to the Ordering information section.

<table>
<thead>
<tr>
<th>Program number</th>
<th>Program name</th>
<th>Terms</th>
<th>Parent, if applicable</th>
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<tbody>
<tr>
<td>5655-W10</td>
<td>CICS Transaction Gateway for z/OS V8.0</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5655-S97</td>
</tr>
</tbody>
</table>

**Full-capacity mainframes**

In cases where full capacity is applicable, the following terms apply.

Execution based, z/OS based, full machine based: The required capacity of a System z IPLA program with these terms equals the MSU-rated capacity of the machines where the System z IPLA program executes.

For more information on mainframe MSU-rated capacities, visit


Reference based: The required license capacity of a System z IPLA program with these terms equals the license capacity of the applicable monthly license charge (MLC) program. This MLC program is called the parent program.

**Sub-capacity mainframes**

In cases where sub-capacity is applicable, the following terms apply.

Execution based: The required capacity of a System z IPLA sub-capacity program with these terms equals the capacity of the LPARs where the System z IPLA program executes.

z/OS based: The required license capacity of a System z IPLA program with these terms equals the license capacity of z/OS on the machines where the System z IPLA program executes.

Reference based: The required license capacity of a System z IPLA program with these terms equals the license capacity of the applicable monthly license charge (MLC) program. This MLC program is called the parent program.

Full machine based: The required license capacity of a System z IPLA program with full machine based terms equals the MSU-rated capacity of the machines where the System z IPLA program executes.

For more information on mainframe MSU-rated capacities, refer to The IBM System z Machines Exhibit, Z125-3901, or visit the Mainframes section of the System z Exhibits Web site

http://ibm.com/zseries/library/swpriceinfo/

For more information on sub-capacity System z IPLA terms and conditions, refer to Software Announcement Z A04-0227, dated August 10, 2004.

For additional information for products with reference-based terms, System z IPLA sub-capacity programs with reference-based terms adds value to the parent program across the environment, regardless of where in the environment the System z IPLA program executes.
An environment is defined as either a single or stand-alone machine or a qualified Parallel Sysplex. You may have one or more different environments across the enterprise. To determine the required license capacity for each System z IPLA program with referenced-based terms, each environment should be assessed separately.

When a System z IPLA sub-capacity program with reference-based terms is used in a qualified Parallel Sysplex environment, the required license capacity of the System z IPLA program must equal with the license capacity of the parent program across the Parallel Sysplex. Qualified Parallel Sysplex refers to one:

- That meets the criteria defined in Hardware Announcement ZA98-0120, dated January 13, 1998
- Where MLC pricing is aggregated across the sysplex

**Sub-capacity eligibility**

To be eligible for sub-capacity charging on select System z IPLA programs, you must first implement and comply with all terms of either sub-capacity Workload License Charges (WLC) or sub-capacity Entry Workload License Charges (EWLC). To implement sub-capacity WLC or EWLC, a machine must be System z (or equivalent). On that machine:

- All instances of the OS/390® operating system must be migrated to the z/OS operating systems
- Any licenses for the OS/390 operating system must be discontinued
- All instances of the z/OS operating systems must be running in z/Architecture® (64-bit) mode

For that machine, you must create and submit a Sub-Capacity Report to IBM each month. Sub-Capacity Reports must be generated using the Sub-Capacity Reporting Tool (SCRT). For additional information or to obtain a copy of SCRT, visit the System z Software Pricing Web site

   http://ibm.com/zseries/swprice

You must comply with all of the terms of the WLC or EWLC offering, whichever is applicable:

- The complete terms and conditions of sub-capacity WLC are defined in the IBM Customer Agreement - Attachment for System z Workload License Charges (Z125-6516).
- The complete terms and conditions for sub-capacity EWLC are defined in the IBM Customer Agreement - Attachment for IBM System z 890 and 800 License Charges (Z125-6587).

Additionally, you must sign and comply with the terms and conditions specified in the amendment to the IPLA contract - Amendment for IBM System z9® and System z Programs Sub-Capacity Pricing (Z125-6929). Once the amendment is signed, the terms in the amendment replace any and all previous System z IPLA sub-capacity terms and conditions.

**Sub-capacity utilization determination for System z host products**

Sub-capacity utilization is determined based on the utilization of a sub-capacity eligible reference product and machine.

**On/Off Capacity on Demand (CoD) for the z/OS host product**

To be eligible for On/Off CoD pricing, you must be enabled for temporary capacity on the corresponding hardware, and the required contract, Attachment for Customer Initiated Upgrade and IBM eServer™ On/Off Capacity on Demand - Software (Z125-6611) must be signed prior to use.
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   http://www.ibm.com/support/electronic

Prices

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